

WHAT IS CLAIMED IS:

1. A biopolymer sponge tube which is closed at one end.

5

2. A biopolymer sponge tube according to claim 1 wherein the biopolymer is selected from the group consisting of structural proteins, cellulose derivatives including oxidised regenerated cellulose, starch derivatives, chitin, chitosan, alginates, glycosaminoglycans and mixtures thereof.

3. A biopolymer sponge tube according to claim 2, wherein the biopolymer is selected from the group consisting of gelatin, all collagen types, keratin, laminin, fibrin or fibronectin.

4. A biopolymer sponge tube according to claim 3, wherein the biopolymer consists essentially of collagen.

20

5. A biopolymer sponge tube according to claim 1 and further comprising a therapeutic compound selected from the group consisting of antiseptics, antibiotics, analgesics, steroids, cell growth factors and wound healing factors.

25

6. A biopolymer sponge tube according to claim 1 which is fully bioabsorbable in a mammalian body.

7. A biopolymer sponge tube according claim 1 having an average internal diameter of from 3mm to 30mm.

30

8. A biopolymer sponge tube according claim 7 having a substantially uniform uncompressed wall thickness of from 1 to 4mm.

5 9. A biopolymer sponge tube according to claim 1, wherein the ratio of length to average external diameter is in the range of 2:1 to 10:1.

10 10. A biopolymer sponge tube according to claim 1, wherein the biopolymer comprises collagen having droplets of lipids dispersed therein.

11. A surgical stapler comprising a staple cartridge and an anvil, and having a biopolymer sponge tube fitted
15 over the staple cartridge and/or over the anvil.

12. A surgical stapler according to claim 11 wherein the biopolymer is selected from the group consisting of structural proteins, cellulose derivatives including
20 oxidised regenerated cellulose, starch derivatives, chitin, chitosan, alginates, glycosaminoglycans and mixtures thereof.

13. A surgical stapler according to claim 12, wherein
25 the biopolymer is selected from the group consisting of gelatin, all collagen types, keratin, laminin, fibrin or fibronectin.

14. A surgical stapler according to claim 13, wherein
30 the biopolymer consists essentially of collagen.

15. A surgical stapler according to claim 11 wherein the biopolymer sponge tube further comprises a therapeutic compound selected from the group consisting of antiseptics, antibiotics, analgesics, steroids, cell growth factors and wound healing factors.

16. A surgical stapler according to claim 11 wherein the biopolymer sponge tube is fully bioabsorbable in a mammalian body.

17. A surgical stapler according to claim 11, wherein the biopolymer comprises collagen having droplets of lipids dispersed therein.

18. A method for stapling mammalian tissue comprising the steps of:

placing the tissue between a staple cartridge and an anvil in a surgical stapler;

fitting a biopolymer sponge tube over the staple cartridge and/or over the anvil; and

firing at least one staple from the staple cartridge through the biopolymer sponge tube and through the tissue to thereby attach the biopolymer sponge tube to the tissue.

19. A method according to claim 18 wherein the biopolymer is selected from the group consisting of structural proteins, cellulose derivatives including oxidised regenerated cellulose, starch derivatives, chitin, chitosan, alginates, glycosaminoglycans and mixtures thereof.

20. A method according to claim 19, wherein the biopolymer is selected from the group consisting of gelatin, all collagen types, keratin, laminin, fibrin or fibronectin.

5

21. A method according to claim 20, wherein the biopolymer consists essentially of collagen.

22. A method according to claim 18 wherein the
10 biopolymer sponge tube further comprises a therapeutic compound selected from the group consisting of antiseptics, antibiotics, analgesics, steroids, cell growth factors and wound healing factors.

15 23. A method according to claim 18 wherein the biopolymer sponge tube is fully bioabsorbable in a mammalian body.

24. A method according to claim 18 wherein the tissue
20 is lung tissue being joined in a lung resection.

25. A method according to claim 18 wherein the biopolymer sponge tube comprises collagen containing a lipid material dispersed therein.

25